

**TRANSMITTAL OF MEETING HANDOUT MATERIALS FOR  
IMMEDIATE PLACEMENT IN THE PUBLIC DOMAIN**

*This form is to be filled out (typed or hand-printed) by the person who announced the meeting (i.e., the person who issued the meeting notice). The completed form, and the attached copy of meeting handout materials, will be sent to the Document Control Desk on the same day of the meeting; under no circumstances will this be done later than the working day after the meeting.  
Do not include proprietary materials.*

**DATE OF MEETING****08/25/2003**

The attached document(s), which was/were handed out in this meeting, is/are to be placed in the public domain as soon as possible. The minutes of the meeting will be issued in the near future. Following are administrative details regarding this meeting:

**Docket Number(s)****Proj 689****Plant/Facility Name****TAC Number(s) (if available)****Reference Meeting Notice****July 21, 2003****Purpose of Meeting  
(copy from meeting notice)**

**To discuss with interested stakeholders inspections,  
tests, analyses, and acceptance criteria (ITAAC) for  
operational programs (programmatic ITAAC).**

**NAME OF PERSON WHO ISSUED MEETING NOTICE****Joseph M. Sebrosky****TITLE****Senior Project Manager****OFFICE****NRR****DIVISION****DRIP****BRANCH****RNRP****Distribution of this form and attachments:****Docket File/Central File****PUBLIC****DFD1**

**PUBLIC WORKSHOP ON PROGRAMMATIC ITAAC  
U.S. NUCLEAR REGULATORY COMMISSION  
NRC AUDITORIUM - TWO WHITE FLINT NORTH  
ROCKVILLE, MD  
AUGUST 25, 2003**

- 1:00 p.m.**      Welcome, objectives, ground rules, Introductions  
Francis "Chip" Cameron, Facilitator
- 1:10 p.m.**      Overview of ITAAC  
  
Jim Lyons, Program Director, New, Research and Test Reactors, NRC  
Joseph Sebrosky, NRC
- 1:30 p.m.**      Participant questions
- 1:45 p.m.**      Participant perspectives
- 2:15 p.m.**      The need for a programmatic ITAAC: policy perspective  
Participant discussion
- 2:45 p.m.**      Potential alternatives to a programmatic ITAAC (for example, the NRC draft  
proposal; a NEI proposal; other proposals)  
Participant discussion
- 3:30 p.m.**      Break
- 3:45 p.m.**      What programs should be covered by a programmatic ITAAC?  
Participant discussion
- 4:15 p.m.**      Future implementation steps  
Participant discussion
- 4:30 p.m.**      Adjourn

## **Programmatic Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) Workshop**



**James E. Lyons,  
Program Director,  
New, Research and Test Reactors  
August 25, 2003**

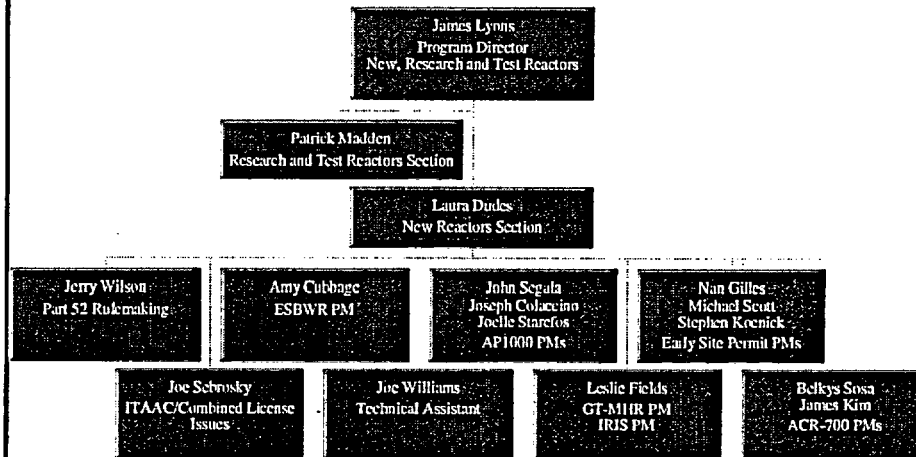
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## **Programmatic ITAAC Workshop**

- **New Reactors Section Organization**
- **10 CFR Part 50 and Part 52 Licensing Processes**
  - **Combined Licenses (COLs)**
- **Programmatic ITAAC recent history**
- **Staff's proposal to address issue**

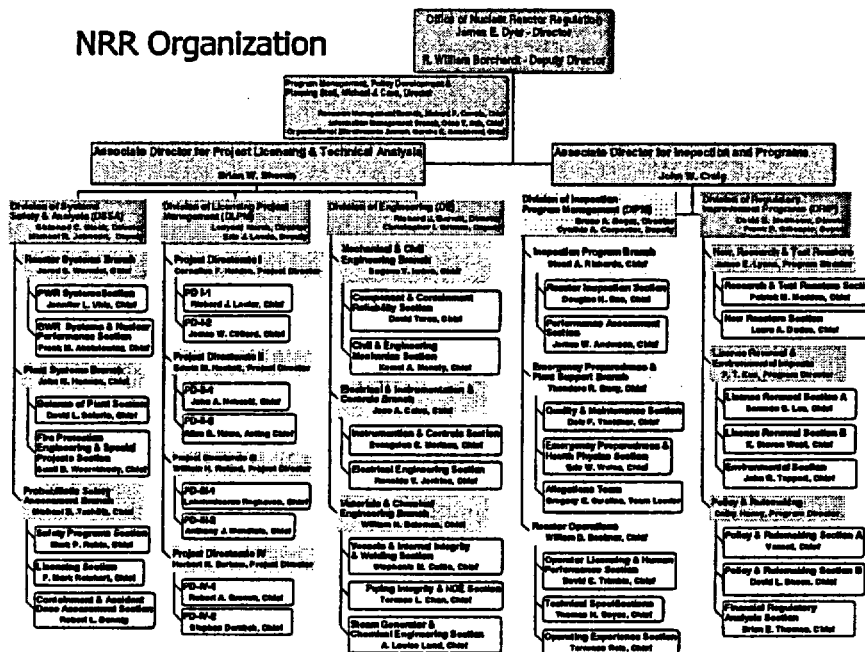
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# New, Research and Test Reactors



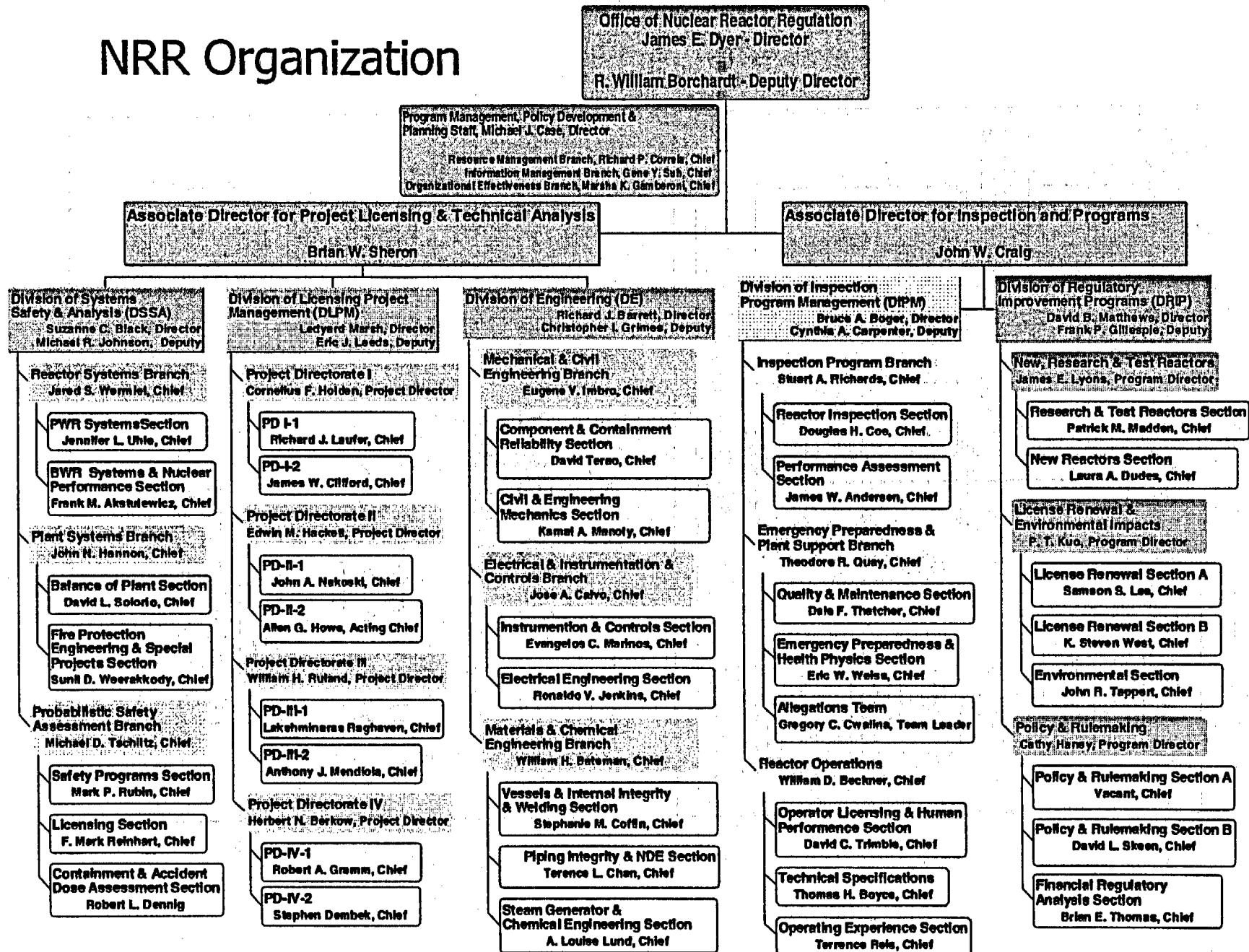
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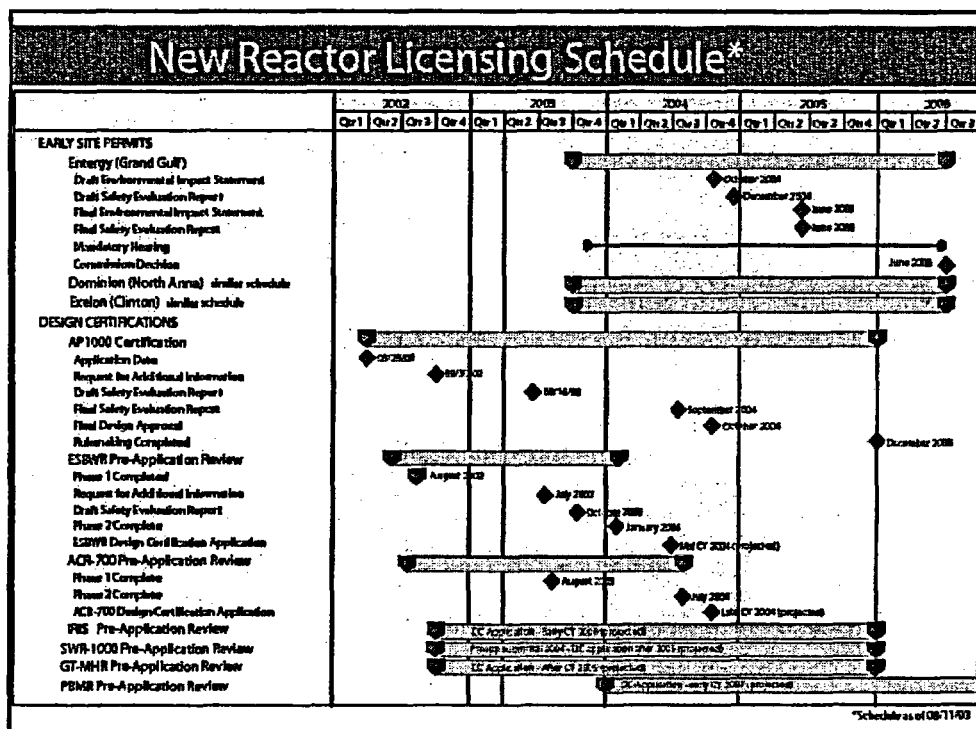
## NRR Organization



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# NRR Organization

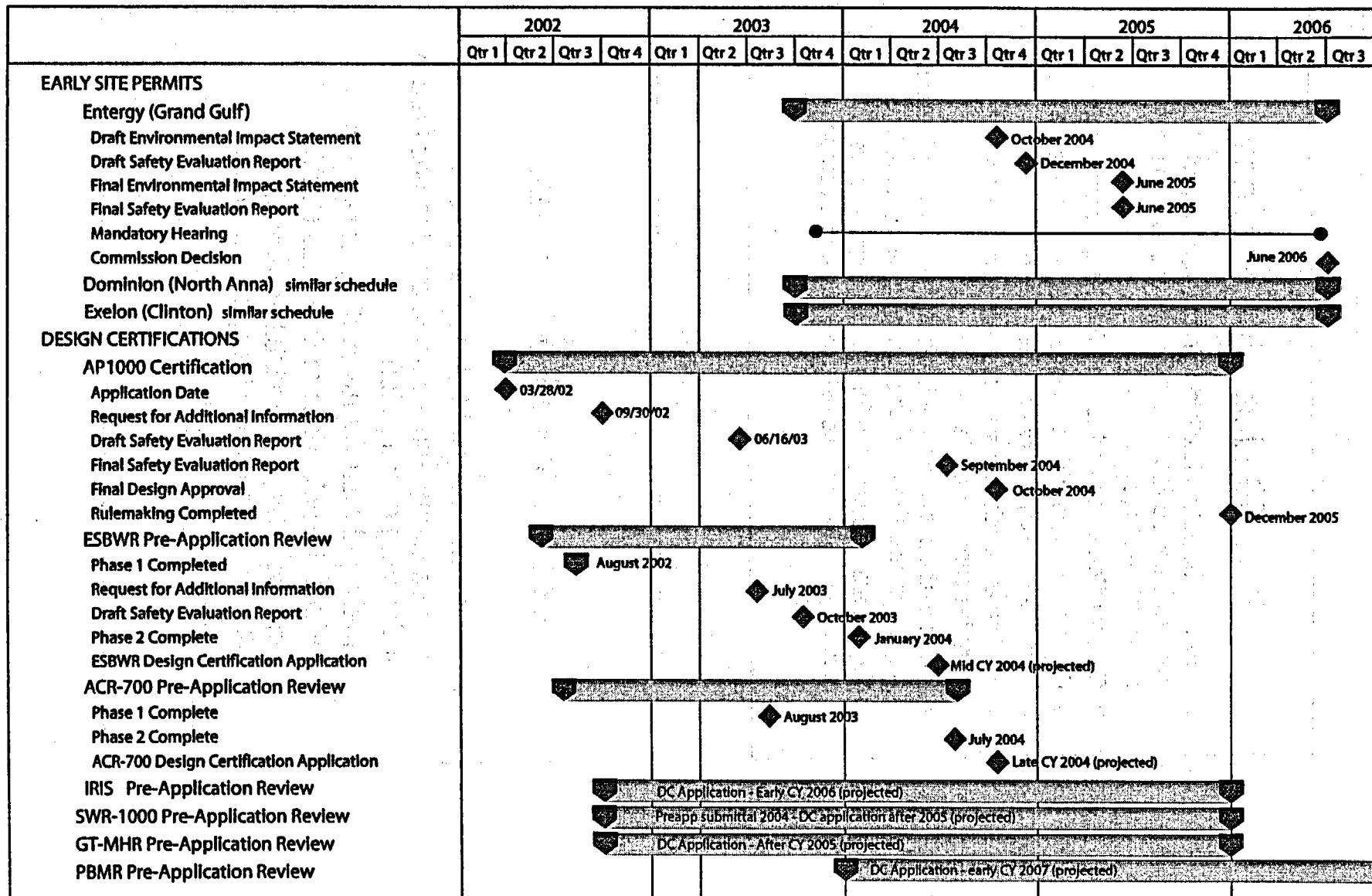




## 10 CFR Part 50 Licensing Process

- Construction Permit
  - Preliminary Design
  - Site Characteristics
  - Environmental
  
- Operating License
  - Final Design
  - Operational Programs
  - Emergency Preparedness

# New Reactor Licensing Schedule\*



\*Schedule as of 08/11/03

## Part 50 Licensing Process

- Public participation is difficult in the 10 CFR Part 50 process because few design details are available at construction stage
- Construction often had to wait for design completion
- Construction rework was needed because of design changes and regulatory backfits
- Final safety decisions are not made until the nuclear plant is nearly complete
- Public participation was difficult at the operating license stage because the nuclear plant was nearly complete
- Major costs expended before final design approved, resulting in an economic risk for the electric company

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## Goals for Part 52 Process

- Stable and predictable licensing process
- Resolve safety and environmental issues before authorizing construction
- Timely and meaningful public participation
- Reduce financial risks to licensees (COL)
- Enhance safety and reliability through standardization of nuclear plant designs

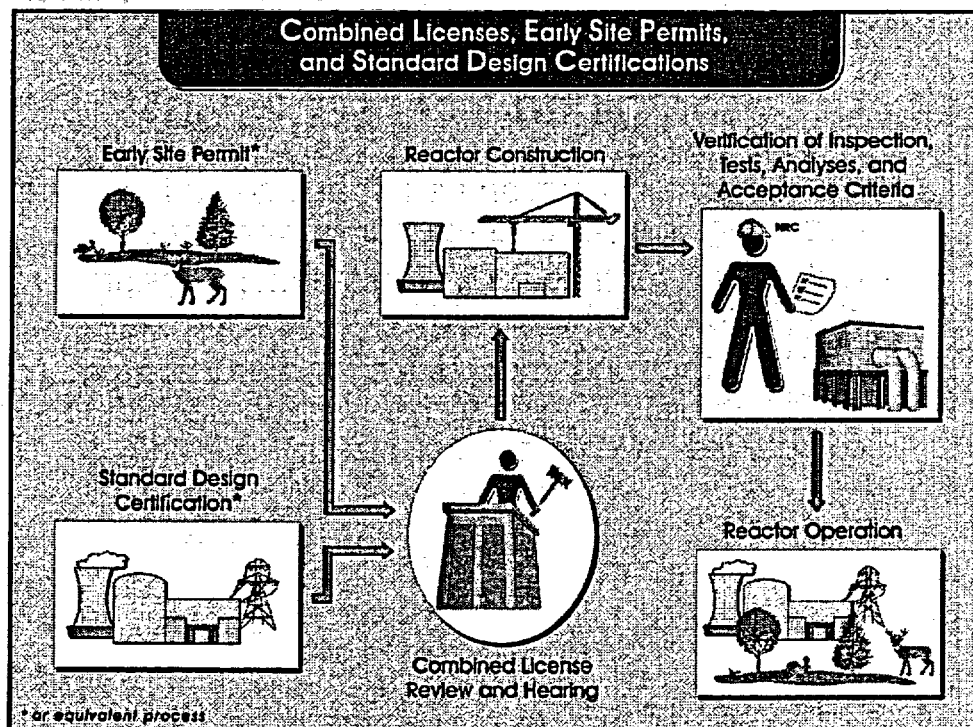
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## Part 52 Licensing Process

- Provides for public participation at the design stage and prior to siting and construction of nuclear power plants
- Final design complete prior to starting construction
- Resolves safety and environmental issues before construction
- Resolves inspection requirements & acceptance criteria (ITAAC) prior to authorization of construction
- Facilitates standardization of nuclear plant designs
- Reduces financial risks for holders of a combined license

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## Part 52 Licensing Process Additional Information

- NUREG/BR-0298, "Nuclear Power Plant Licensing Process," provides an overview of the Part 50 and Part 52 licensing processes
- New Reactor Licensing website
  - <http://www.nrc.gov/reactors/new-reactor-licensing.html>
- NRC has initiated a rulemaking to update and clarify the alternative licensing processes in Part 52
  - Proposed rule Federal Register Notice issued July 3, 2003
  - Comment period end September 16, 2003
- Construction Inspection Framework Document Issued in May 2003
  - Federal Register Notice issued June 6, 2003
  - Workshop scheduled for August 27, 2003
  - Public comment period ends September 15, 2003

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## Combined License (COL)

- Combined construction permit and conditional operating license for a nuclear power plant
- COL may reference an ESP, a standard design certification, both, or neither
- A COL is the fundamental licensing process in Part 52 for reducing the financial risks for electric companies building nuclear plants.

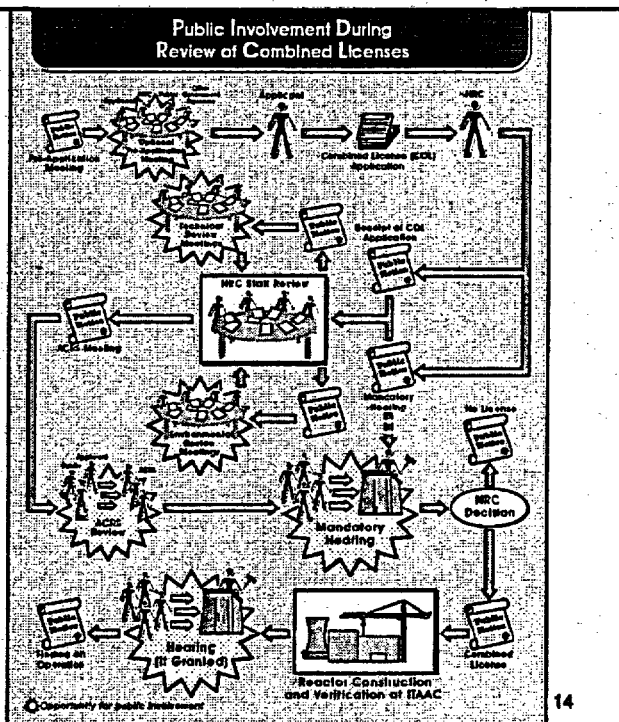
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## Combined License - ITAAC

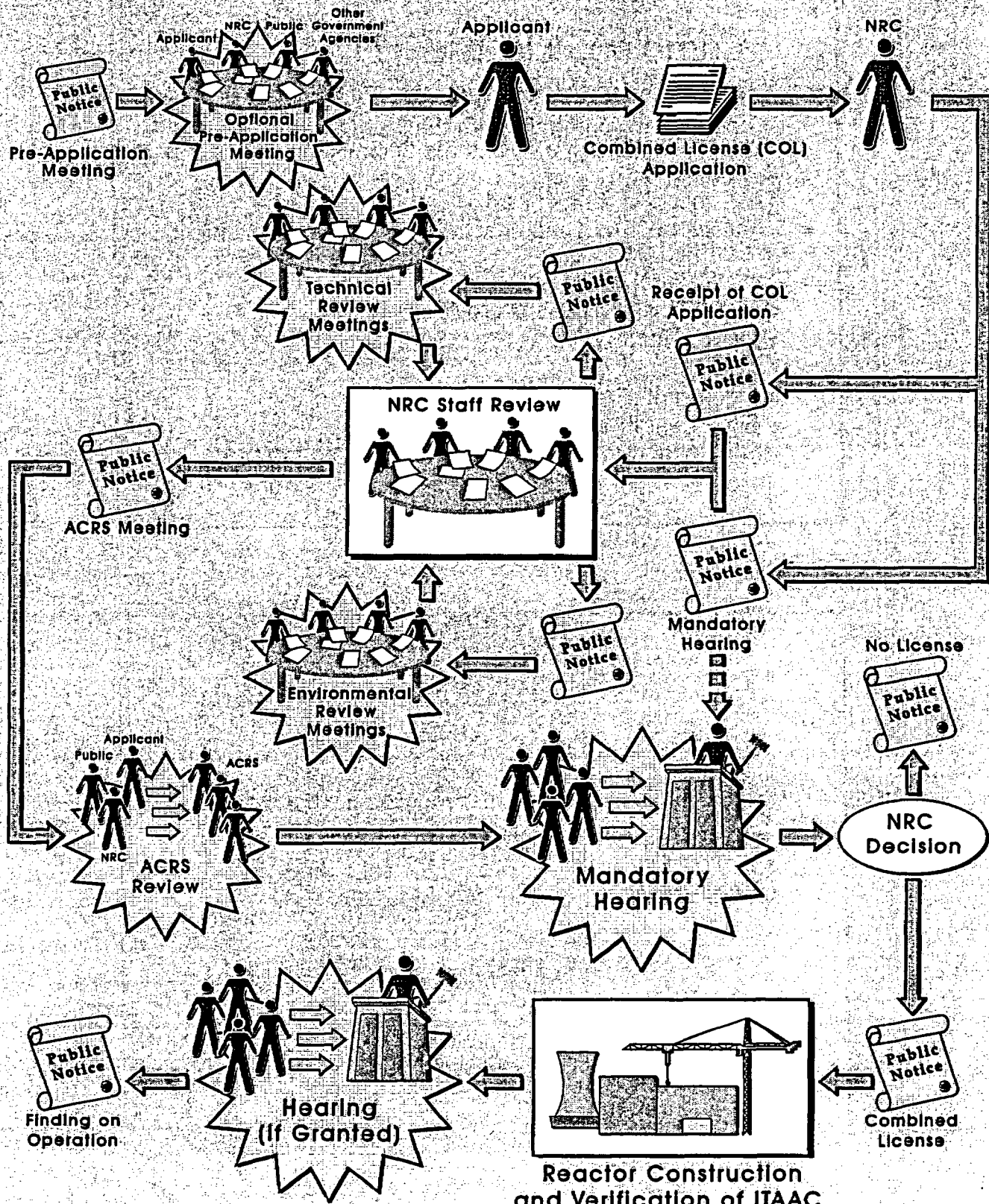
- ITAAC verify that the facility has been constructed and will be operated in conformity with the license, the provisions of the Atomic Energy Act, and the Commission's rules and regulations
- ITAAC met prior to fuel load
- ITAAC part of Tier 1 material in Design Control Document for Certified Designs
- Tier 1 Material Includes
  - Definitions and general provisions
  - Design descriptions
  - ITAAC
  - Significant site parameters
  - Significant interface parameters
- Hearing opportunity after plant is built is tied to ITAAC

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## Combined License Overview



# Public Involvement During Review of Combined Licenses



Opportunity for public involvement

## Programmatic ITAAC –recent history

- Should a COL application contain ITAAC on operational programs required by regulations such as training and emergency planning (programmatic ITAAC)
- SECY-00-0092, "Combined License Review Process" discussed issue
- Staff requirements memorandum directed the staff, after discussions with stakeholders to provide a recommendation to the Commission
- May 14, 2001, letter from NEI restated their position and requested early resolution of the issue

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## Programmatic ITAAC – recent history

- Programmatic ITAAC issue separated from Part 52 rulemaking
- Federal Register Notice Issued June 25, 2001, seeking public comment
  - 13 Comment letters received
    - 10 from industry
    - 2 from Illinois Department of Nuclear Safety
    - 1 from Public Citizen

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## Programmatic ITAAC – recent history

- In SECY 02-0067 staff requested approval of position that ITAAC for programs are needed
- Commission's September 11, 2002, staff requirements memorandum disapproved the staff's position
  - Approved a much more limited use of programmatic ITAAC
  - Directed the staff to work with stakeholders to develop guidelines
    - Determine programmatic information needed in a COL
    - Determine when programs beyond emergency planning require or will likely require ITAAC

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## Staff's Proposal

- Staff held public meetings with the Nuclear Energy Institute on February 20, 2003, and May 22, 2003, to discuss issue
- Staff developed proposal to address issue
  - 14 programs listed in SECY-02-0067 broken into 5 categories
  - Fire protection program chosen as example to determine level of detail needed to issue a combined license without ITAAC

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## Staff's Proposal

- Staff's proposed 5 categories of programs
  - Category A – PITAAC required (e.g., emergency planning)
  - Category B – PITAAC not necessary because hardware-related ITAAC address the results to which the program is directed (e.g., quality assurance)
  - Category C – PITAAC not necessary because program and its implementation can be fully described in the COL application (several programs may fall into this category)
  - Category D – PITAAC are necessary because program and its implementation cannot be fully described in the COL application
  - Category E – PITAAC not necessary because ITAAC will be dispositioned after fuel load (e.g., ISI program)

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## Staff's Proposal

- Fire protection proposal
  - Program may fall into category C or D
  - Uses information from Callaway and AP600 design certification review
  - Level of information needed in COL such that an ITAAC is not needed includes the following:
    - COL action items from design certification application
    - Level of detail found in Callaway standard plant FSAR
    - Level of detail found in Callaway site addendum portion of the FSAR
    - Level of detail found in Callaway core fire protection program procedures
    - Level of detail found in implementing procedures unique to the fire protection program
    - Fire protection license condition

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## Staff's Proposal Additional Information

- Federal Register Notice issued July 24, 2003, seeking comment on Proposal
  - Comment period ends September 15, 2003
- Information available on NRC website under the combined license discussion
  - <http://www.nrc.gov/reactors/new-licensing/licensing-process.html>
- Blue-bound handout contains selected material from the website

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## Staff's Proposal

- Federal Register Notice Topics
  - Is the categorization of programs in the staff's proposal appropriate?
  - Is the fire protection program level of detail appropriate in the staff's proposal?

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Section 10 CFR 51.21 of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, the Commission is issuing this environmental assessment and finding of no significant impact.

#### Environmental Assessment

##### *Identification of the Proposed Action*

The proposed action would revise Facility Operating Licenses No. NPF-76 and NPF-80, replacing "Central Power and Light Company (CPL)" with "AEP Texas Central Company" throughout the Operating License of each unit.

The proposed action is in accordance with the licensee's application dated March 31, 2003.

##### *The Need for the Proposed Action*

The application was submitted by STPNOC, acting on behalf of itself and for Texas Genco, LP, the City Public Service Board of San Antonio, Central Power and Light Company, and the City of Austin, Texas. The amendments change the operating license to reflect a change in the name of "Central Power and Light Company (CPL)," a licensed co-owner of the facility, to "AEP Texas Central Company (AEP)," effective December 23, 2002.

##### *Environmental Impacts of the Proposed Action*

The Commission has completed its evaluation of the proposed action and changes to the licenses. We agree with the licensee that the name change will not impact the existing ownership of South Texas Project, Units 1 and 2 or the existing entitlement to power and will not alter the existing antitrust license conditions applicable to STPNOC's ability to comply with these conditions or with any of its other obligations or responsibilities. As stated by the licensee, "With the exception of this name change, this transaction does not in any way affect the qualifications of AEP Texas Central Company for ownership of 25.2% [percent] of South Texas Project Electric Generating Station Units 1 and 2 (STPEGS), nor does it involve any direct or indirect transfer of control of the STPEGS Operating Licenses." Therefore, the change will not increase the probability or consequences of accidents, no changes are being made in the types or amounts of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed

action does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed action.

##### *Environmental Impacts of the Alternatives to the Proposed Action*

Since the Commission has concluded there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed action, the staff considered denial of the proposed action. Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

##### *Alternative Use of Resources*

This action does not involve the use of any different resources than those previously considered in the Final Environmental Statement for the South Texas Project, Units 1 and 2.

##### *Agencies and Persons Consulted*

On July 15, 2003, the staff consulted with the Texas State official, Arthur Tate of the Division of Compliance and Inspection, Texas Department of Health, Bureau of Radiation Control, regarding the environmental impact of the proposed action. The State official had no comments.

##### *Finding of No Significant Impact*

On the basis of the environmental assessment, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's application dated March 31, 2003. Documents may be examined, and/or copied for a fee, at the NRC's Public Document Room (PDR), located at One White Flint North, Public File Area O1 F21, 11555 Rockville Pike (first floor), Rockville, Maryland. Publicly available records will be accessible electronically from the Agencywide Documents Access and Management System (ADAMS) Public Electronic Reading Room on the Internet at the NRC Web site, <http://www.nrc.gov/reading-rm/adams.html>. Persons who do not have

access to ADAMS or who encounter problems in accessing the documents located in ADAMS, should contact the NRC PDR Reference staff by telephone at 1-800-397-4209 or 301-415-4737, or by e-mail at [pdr@nrc.gov](mailto:pdr@nrc.gov).

Dated at Rockville, Maryland, this 18th day of July, 2003.

For the Nuclear Regulatory Commission.

Robert A. Gramm,

Chief, Section 1, Project Directorate IV, Division of Licensing Project Management, Office of Nuclear Reactor Regulation.

[FR Doc. 03-18844 Filed 7-23-03; 8:45 am]

BILLING CODE 7590-01-P

## NUCLEAR REGULATORY COMMISSION

### Workshop on Issues Related to the Level of Programmatic Information Needed in a Combined License Application; Submitted in Accordance With 10 CFR Part 52

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of August 25, 2003, public workshop.

**SUMMARY:** The Nuclear Regulatory Commission (NRC) is holding a workshop on August 25, 2003, on issues related to the level of programmatic information that would be needed in order to issue a combined license (COL) in accordance with the requirements of Title 10 of the Code of Federal Regulations Part 52, Subpart C without inspections, tests, analyses, and acceptance criteria (ITAAC) for any particular program. The NRC staff has developed a draft proposal titled, "Use of Fire Protection as an Example Program to Discuss Programmatic Inspections, Tests, Analyses, and Acceptance Criteria," to address this issue. The NRC staff has scheduled the public workshop to discuss the issue and to solicit stakeholder comments on the staff's draft proposal. This workshop will be transcribed. To allow for timely registration on the day of the meeting, it is recommended that guests preregister for the workshop. To preregister for the workshop, contact Mr. Joseph Sebrosky (information provided below) and provide the following information: name, organization, phone number, and country of citizenship.

**FOR FURTHER INFORMATION CONTACT:** Mr. Joseph M. Sebrosky, New, Research and Test Reactors Program, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Mr. Sebrosky may be reached by phone at 301-415-1132 or by e-mail at

[jms3@nrc.gov](mailto:jms3@nrc.gov). Questions on the public meeting process should be directed to Mr. Chip Cameron; e-mail: [fxc@nrc.gov](mailto:fxc@nrc.gov), telephone: 301-415-1642; Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

**DATES:** The workshop will be held on August 25, 2003, from 1 p.m. to 4:30 p.m. Comments on the NRC staff's draft proposal should be submitted by September 15, 2003. Comments received after the due date will be considered if it is practical to do so, but the Commission is able to assure consideration only for comments received on or before this date.

**ADDRESSES:** The workshop will be held at the Nuclear Regulatory Commission offices in the Two White Flint North Auditorium, 11545 Rockville Pike, Rockville, Maryland.

The NRC staff's draft proposal to use fire protection as an example program to discuss programmatic ITAAC is available for public inspection in the Agencywide Document Access and Management System (ADAMS) in the NRC Public Document Room located at One White Flint North, 11555 Rockville Pike, Public File Area O1 F21, Rockville, Maryland. The information is also available electronically from the Publicly Available Records (PARS) component of ADAMS (ADAMS # ML031820084). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). For more information, contact the NRC Public Document Room (PDR) Reference staff at 1-800-397-4209, 202-634-3273 or by e-mail to [pdr@nrc.gov](mailto:pdr@nrc.gov). In addition, the draft proposal and additional associated documentation can be found on NRC's Web site under the combined license discussion on the following Web page: <http://www.nrc.gov/reactors/new-licensing/licensing-process.html>.

Written comments on the draft proposal should be sent to: Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, Mail Stop T6-D59, Nuclear Regulatory Commission, Washington, DC 20555-0001. Comments may be hand-delivered to the NRC at 11545 Rockville Pike, Rockville, Maryland, between 7:45 a.m. and 4:15 p.m. on Federal workdays. Comments may be submitted electronically by the Internet to the NRC at [nrcprep@nrc.gov](mailto:nrcprep@nrc.gov). All comments received by the Commission, including those made by Federal, State, and local agencies, Indian tribes, or other interested persons, will be made available electronically at the Commission's PDR

in Rockville, Maryland or from the PARS component of NRC's document system (ADAMS).

**SUPPLEMENTARY INFORMATION:** In 1989, the NRC established new alternatives for nuclear plant licensing under Title 10 of the Code of Federal Regulations (10 CFR) Part 52, which describes, among other things, a process for issuing a combined construction and operating license, or combined license (COL). A COL authorizes construction and, with conditions, operation of a nuclear power plant. A COL application must describe the conditions (the ITAAC) that are necessary to ensure that the plant has been properly constructed and will operate safely. After issuing a COL, the NRC verifies that the licensee has completed the required ITAAC before the plant can operate. The NRC publishes notices of the successful completion of the ITAAC. Then, at least 180 days before the scheduled date for initial loading of nuclear fuel into the reactor, the NRC publishes a notice of intended operation. The notice will provide that any person whose interest may be affected by operation of the plant may request the Commission to hold a hearing on whether the facility complies, or on completion will comply with the acceptance criteria in the COL. A request for a hearing must demonstrate that the licensee has not met or will not meet the acceptance criteria in the COL.

The principle issue to be discussed at the workshop is the staff's draft proposal that categorizes operational programs such as emergency planning and training into those that will likely require ITAAC, those that may or may not require ITAAC (depending on the level of information available at the COL stage), and those that will be unlikely to require ITAAC. The staff would also like to discuss its proposal relative to the level of information needed for operational programs such as fire protection in order to issue a COL without ITAAC for any particular program.

In SECY-02-0067, "Inspections, Tests, Analyses, and Acceptance Criteria for Operational Programs (Programmatic ITAAC)," the staff requested Commission approval for its position that COLs for a nuclear power plant submitted in accordance with the requirements of 10 CFR Part 52 Subpart C contain ITAAC for operational programs required by regulations such as training and emergency planning (ADAMS Accession Number ML020700641). The Commission disapproved the staff's position in a September 11, 2002, staff requirements

memorandum (SRM) (ADAMS Accession Number ML022540755). The Commission approved a much more limited use of programmatic ITAAC than that proposed by the staff. The Commission directed the staff to resolve the maximum number of programmatic issues prior to issuing a COL. The Commission also directed the staff to develop appropriate guidelines to support the submission of necessary and sufficient information on programs in COL applications and clarify when programs beyond emergency planning, if any, call for or are likely to call for ITAAC in the COL application.

In a public meeting on May 22, 2003, the NRC staff discussed a response to the SRM including a discussion of the following option. A draft standard review plan Section 14.3 Appendix E, "Programmatic ITAAC" would be developed for guidance. The staff stated that it was considering categorizing the 14 programs that it listed in SECY-02-0067 in the following manner as part of this guidance:

**Category A:** Programmatic ITAAC are required. A program that falls into this category is emergency planning.

**Category B:** Programmatic ITAAC are not necessary because hardware-related ITAAC address the results to which the program is directed. Examples of programs that may fall into this category are equipment qualification, quality assurance, and containment leak rate testing.

**Category C:** An ITAAC for a program or elements of the program is not necessary because the program and its implementation can be fully described<sup>1</sup> in the application and found to be acceptable at the COL stage.<sup>2</sup>

**Category D:** An ITAAC for a program or elements of the program is necessary because the program and its implementation cannot be fully described<sup>1</sup> in the application. That is, the COL applicant cannot provide the necessary and sufficient programmatic information for approval of the COL without ITAAC.<sup>2</sup>

**Category E:** An ITAAC for a program is not necessary because ITAAC will be dispositioned prior to fuel load and the program is not required to be implemented until after fuel load. Examples of programs that may fall into this category include the inservice inspection and inservice testing

<sup>1</sup> A principal issue for these categories is what constitutes a "fully described" program.

<sup>2</sup> The following programs may fall into Category C or D depending on the information provided at the time of the COL: fire protection, radiation protection, security, fitness for duty, training, access authorization, reportability, licensed operator training.

programs, and the maintenance rule program.

Subsequent to the May 22, 2003, meeting the NRC staff developed a proposal to use the fire protection program as an example program to illustrate the level of detail needed to determine if programmatic ITAAC are necessary. The fire protection program was chosen because it could fall into Category C or D above depending on the information provided at the time of a COL application.

*During the workshop the following topics will be discussed:*

- Is the categorization of the 14 programs listed in SECY-02-0067 appropriate?
- Are there programs that are missing from the list?
- Should any of the programs be placed in different categories?
- The NRC staff would like to discuss the programs that fall into Categories C and D. The NRC staff's proposal uses the fire protection program for the AP600 standard nuclear reactor design and the Callaway Plant as a starting point to develop guidelines for the level of programmatic information that would be needed in order to issue a COL without ITAAC for that program. Is the level of detail contained in the staff's proposal appropriate?

A specific agenda for the workshop will be developed and made available prior to the meeting. To assure a diversity of viewpoints, the NRC is inviting stakeholders from the nuclear power industry, representatives from citizens groups, and State agencies, to sit in a roundtable discussion. Although the focus of the meeting will be on the roundtable discussion, there will be opportunities for members of the audience to offer comments and ask questions. Questions related to the staff's draft proposal should be directed to Joseph Sebrosky. Questions related to the public meeting process should be directed to Mr. Chip Cameron. Mr. Sebrosky's and Mr. Cameron's contact information is provided above.

Dated at Rockville, Maryland, this 18th day of July, 2003.

For The Nuclear Regulatory Commission.  
James E. Lyons,

*Program Director, New, Research and Test Reactors Program, Division of Regulatory Improvement Programs, Office of Nuclear Reactor Regulation.*

[FR Doc. 03-18843 Filed 7-23-03; 8:45 am]

BILLING CODE 7590-01-P

## NUCLEAR REGULATORY COMMISSION

### Proposed Generic Communication Method For Estimating Effective Dose Equivalent From External Radiation Sources Using Two Dosimeters

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of opportunity for public comment.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is proposing to issue a Regulatory Issue Summary (RIS) which approves and provides guidance on a two dosimeter monitoring method that can be used by licensees for estimating effective dose equivalent (EDE) from external radiation exposures. The NRC is seeking comment from interested parties on the clarity and utility of the guidance contained in the proposed RIS. In particular, comment is requested on the following questions:

1. Is the two dosimeter method a technically acceptable alternative to the current practice of estimating EDE from deep dose equivalent (DDE)?
2. Is the NRC use of a RIS to approve the two dosimeter method acceptable under the existing regulations?
3. Are algorithms that attempt to provide better estimates of the effective dose equivalent by using more than one dosimeter of importance to your industry?
4. Do you believe that this and similar algorithms, many of which were described in NCRP Publication 122, are sufficiently technically developed to serve as a basis for dosimetry of record?
5. Is the discussion of the issues provided in the RIS sufficiently detailed to provide a background for the reasons for approving the EPRI method generically?
6. Should different or more detailed guidance be provided in an NRC Regulatory Guide or generic communication?
7. Should the definition of the total effective dose equivalent (TEDE) in part 20 be revised to replace the deep dose equivalent with the effective dose equivalent, and make that quantity more consistent with national and international definitions?
8. To what extent should accuracy replace conservatism as the goal for personnel monitoring?

The NRC will consider the comments received in its final evaluation of the proposed RIS.

This Federal Register notice is available through the NRC's Agencywide Documents Access and Management System (ADAMS) under accession number ML031980001.

**DATES:** Comment period expires September 22, 2003. Comments submitted after this date will be considered if it is practical to do so, but assurance of consideration cannot be given except for comments received on or before this date.

**ADDRESSES:** Submit written comments to the Chief, Rules and Directives Branch, Division of Administrative Services, Office of Administration, U.S. Nuclear Regulatory Commission, Mail Stop T6-D59, Washington, DC 20555-0001, and cite the publication date and page number of this Federal Register notice. Written comments may also be delivered to NRC Headquarters, 11545 Rockville Pike (Room T-6D59), Rockville, Maryland, between 7:30 a.m. and 4:15 p.m. on Federal workdays.  
**FOR FURTHER INFORMATION CONTACT:** Sami Sherbini at (301) 415-7853 or by e-mail to [sxs2@nrc.gov](mailto:sxs2@nrc.gov), or Roger Pedersen at (301) 415-3162 or by e-mail to [r1p1@nrc.gov](mailto:r1p1@nrc.gov).

#### SUPPLEMENTARY INFORMATION:

**Draft Regulatory Issue Summary Method For Estimating Effective Dose Equivalent From External Radiation Sources Using Two Dosimeters**

#### Addressees

All U.S. Nuclear Regulatory Commission (NRC) licensees.

#### Intent

NRC is issuing this regulatory issue summary (RIS) to provide guidance on an approved two-dosimeter monitoring method for estimating effective dose equivalent (EDE) from external radiation exposures. This EDE can be used instead of the deep dose equivalent (DDE) in complying with NRC regulatory requirements.

#### Background

Total effective dose equivalent (TEDE) is used in 10 CFR part 20 (part 20) to specify dose limits for occupationally exposed workers, and for members of the public. Other requirements (in part 20 and other parts of NRC's regulations), such as the criteria for license termination, are also specified in terms of the TEDE. Since EDE cannot be directly measured, part 20 defines TEDE as "the sum of the deep-dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures)." Part 20 goes on to specify that this DDE be measured at the part of the whole body with the highest exposure. This DDE can be directly measured with available dosimeters, and, in most exposure situations, provides a reasonable, conservative, and often the best, estimate for EDE from

# **Nuclear Energy Institute Handouts**

## **Programmatic Inspections, Tests, Analyses and Acceptance Criteria**

**August 25, 2003**

**COMBINED LICENSE APPLICATION  
PLANT AP1000-1  
FSAR SECTION 9.5.1, "FIRE PROTECTION SYSTEM"**

The following is an example of the information that would be expected to be submitted in a COL applicant's FSAR, Section 9.5.1, "Fire Protection System". The example was developed to provide a basis for discussion with the NRC on program information to be included in a COL application in response to the July 1, 2003, proposal. The hypothetical COL application references the Westinghouse AP1000 Design Control Document (DCD), Revision 0, which is essentially the same as the AP600 DCD approved by the NRC. The following information supplements the generic DCD with plant specific information for the Fire Protection System and Fire Protection Program. Program information is based, in part, on the Callaway FSAR Site Addendum, Section 9.5.1, and is augmented to address the COL information items in the AP1000 DCD Section 9.5.1.8.

In general, the COL applicant would be responsible for confirming the applicability of the approved standard design information, including references; addressing new requirements and guidance (such as Regulatory Guide 1.189, as appropriate); and identifying any deviations from the approved standard design. For this example, it was assumed that there are no deviations from the approved design and that there is no operating unit at the site. Also for this example, references are made to FSAR Appendix 9A, Chapter 17, and Table 9.5-2, "Compliance with Regulatory Guide 1.189." That information has not been generated for this example but would be included in an actual application. Some COL Information Items are identified that would best be addressed in site specific supplements to tables that are part of the generic DCD. Site specific information was not developed for this example. [FP-4, 5] With those exceptions, the following example represents the information that would be provided for Section 9.5.1 of an FSAR.

At the point where the description provided addresses one or more COL information items from the generic DCD, including "WA" items from AP1000 Table 9.5.1-1, the specific items addressed are identified in brackets.

**9.5.1 Fire Protection System**

**9.5.1.1 Design Basis**

**9.5.1.1.1 Safety Design Basis**

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

#### **9.5.1.1.2 Power Generation Design Basis**

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

#### **9.5.1.1.3 Non-Safety Related Containment Spray Function**

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

#### **9.5.1.2 System Description**

##### **9.5.1.2.1 General Description**

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

##### **9.5.1.2.1.1 Plant Fire Prevention and Control Features**

###### **Architectural and Structural Features**

The information included in the AP1000 DCD for this section is confirmed to be applicable to Plant AP1000-1. Additionally, fire exit routes from all areas of the plant will be clearly marked prior to implementation of the Fire Protection Program as discussed in Section 9.5.1.9. [WA-56]

###### **Plant Arrangement**

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

###### **Electrical Cable Design, Routing and Separation**

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

###### **Control of Combustible Materials**

The information included in this section of the AP1000 DCD is confirmed to be applicable to Plant AP1000-1. Subsection 9.5.1.9.4 of this section describes the

programmatic controls for combustible materials that will be established and implemented for the fire protection program.

#### Control of Radioactive Materials

The information included in this section of the AP1000 DCD is confirmed to be applicable to Plant AP1000-1. Subsection 9.5.1.9.5 of this section summarizes the programmatic controls for radioactive materials in fire related emergencies that will be established and implemented for the fire protection program.

##### 9.5.1.2.1.2 Fire Detection

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

##### 9.5.1.2.1.3 Fire Water Supply System

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

##### 9.5.1.2.1.4 Automatic Fire Suppression Systems

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

##### 9.5.1.2.1.5 Manual Fire Suppression Systems

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

##### 9.5.1.2.2 System Operation

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

##### 9.5.1.2.3 Component Description

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

#### 9.5.1.3 Safety Analysis (Fire Protection Analysis)

The information included in this section of the AP1000 DCD is applicable to Plant AP1000-1. FSAR Appendix 9A supplements the Generic DCD with the fire protection analysis of site-specific fire areas. [FP-2]

#### 9.5.1.4 Testing and Inspection

The information included in this section of the AP1000 DCD is applicable to Plant AP1000-1. Subsection 9.5.1.9.6 provides information on testing and inspection programs for plant operation that will be established and implemented for the fire protection program.

#### 9.5.1.5 Instrumentation Applications

The information in the AP1000 DCD for this section is applicable to and complete for Plant AP1000-1. There are no deviations from the information in that section and no further information is required.

#### 9.5.1.6 Personnel Qualification and Training

The information in the AP1000 DCD for this section is applicable to Plant AP1000-1. Subsection 9.5.1.9.7 summarizes qualification and training programs that will be established and implemented for the fire protection program.

#### 9.5.1.7 Quality Assurance

The information in this section of the AP1000 DCD is applicable to Plant AP1000-1. Chapter 17 of the FSAR describes the QA program and its application to fire protection. [WA-35]

#### 9.5.1.8 Combined License Information

Section 9.5.1.8 of the AP1000 DCD identifies information to be addressed in a COL application referencing the generic DCD. The generic DCD also includes Table 9.5.1-1 that provides a point-by-point comparison of the design to the provisions of BTP CMEB 9.5-1. Items in that table identified as "WA" (will address) are left to the COL applicant to address.

Table 9.5-1 (attached) identifies where the COL information item is addressed for each of the "WA" items in the AP 1000 generic Table 9.5.1-1. The text of this section is annotated with a parenthetical identification of the WA item at the point where it is addressed.



#### 9.5.1.9 COL Fire Protection Program Implementation

This section discusses the elements of the Fire Protection Program that are the responsibility of the COL applicant and outside the scope of the AP1000 DCD. Many of these elements are typically finalized during the plant construction period. Since this application is for a COL authorizing both construction and operation, a full description of the operations phase program procedures is included in the application. The description reflects a typical organization of fire protection procedures; actual plant procedures may be organized differently.

In accordance with BTP CMEB 9.5-1, C.1.e(1) [WA 26], the fire protection program described in this section will be fully operational for buildings storing new fuel and adjacent fire areas that could affect the fuel storage area prior to receipt of new fuel. In accordance with BTP CMEB 9.5-1, C.1.e(2) [WA 27], the fire protection program described in this section will be fully operational prior to initial fuel loading.

##### 9.5.1.9.1 Fire Protection Program

The Plant AP1000-1 Fire Protection Program will be established to ensure that a fire will not prevent safe shutdown of the plant and will not endanger the health and safety of the public. Fire protection at the plant will use a defense-in-depth concept that includes fire detection, extinguishing systems and equipment, administrative controls and procedures, and trained personnel. [WA 2]

##### 9.5.1.9.1.1 Fire Protection Program Criteria

The Plant AP1000-1 Fire Protection Program is based on the criteria of several industry and regulatory documents. The level of compliance with Regulatory Guide 1.189 is described in Table 9.5-2 (future). NFPA Standards No. 4, No. 4A, No. 6, No. 7, No. 8. and No. 27 were used as guidance in development of the Fire Protection Program. [WA-10] Any updates to the list of exceptions to the NFPA Standards will be processed by a change to this document and shown in a revision to Table 9.5.1-3 (future). [FP-4] Table 9.5-1 provides a cross-reference to information addressing compliance with BTP CMEB 9.5-1. Note that attached Table 9.5-1 does not include items addressed by or not applicable to the AP1000 standard design.

##### 9.5.1.9.1.2 Responsibilities

A senior manager reporting to the Chief Nuclear Officer will be responsible for the Plant AP1000-1 Fire Protection Program. Assigning the responsibilities at that level will provide the authority to delegate responsibility and to obtain the resources and assistance necessary to meet Fire Protection Program objectives. [WA-1,3] The relationship of this manager and other personnel with fire

protection responsibilities will be shown on organization charts in the appropriate procedures. [WA-5]

The assigned senior manager will be responsible for the following:

- 1) Ensuring that programs and periodic inspections are implemented to:
  - a) Minimize the amount of combustibles in safety-related areas
  - b) Determine the effectiveness of housekeeping practices
  - c) Assure the availability and acceptability of the following:
    - i) Fire Protection System and components
    - ii) Manual fire fighting equipment
    - iii) Emergency breathing apparatus
    - iv) Emergency lighting
    - v) Communication equipment
    - vi) Fire barriers including fire rated walls, floors and ceilings, fire rated doors, dampers, etc., fire stops and wraps, and fire retardant coatings.
  - d) Assure prompt and effective corrective actions are taken to correct conditions adverse to fire protection and preclude their recurrence.
- 2) Ensuring that periodic maintenance and testing of fire protection systems, components, and manual fire fighting equipment is conducted, test results are evaluated, and the acceptability of systems under test is determined in accordance with established plant procedures. [WA-29]
- 3) Designing and selecting equipment related to Fire Protection.
- 4) Reviewing and evaluating proposed work activities to identify potential transient fire loads.
- 5) Managing the Plant Fire Brigade, including:
  - a) Developing, implementing and administering the Fire Brigade Training Program.
  - b) Scheduling and conducting fire brigade drills.
  - c) Critiquing fire drills to determine how well training objectives are met.
  - d) Performing a periodic review of the fire brigade roster and initiating changes as needed.
  - e) Maintaining the fire training program records for members of the fire brigade and other personnel.
  - f) Ensuring that sufficient fire brigade personnel are identified at the beginning of each shift.

- 6) Developing and conducting the Fire Extinguisher Training Program
- 7) Implementing a program for indoctrination of personnel gaining unescorted access to the protected area in appropriate procedures which implement the fire protection program.
- 8) Implementing a program for instruction of personnel on the proper handling of accidental events such as leaks or spills of flammable materials.
- 9) Preparing procedures to meet possible fire situations in the plant and for assuring assistance is available for fighting fires in radiological areas.
- 10) Implementing a program that controls and documents inoperability of fire protection systems and equipment. This program should also initiate proper notifications and compensatory actions when inoperability of any fire protection system or component is identified.
- 11) Developing and implementing preventive maintenance, corrective maintenance, and surveillance test fire protection procedures.
- 12) Ensuring plant modifications, new procedures and revisions to procedures associated with fire protection equipment and systems that have significant impact on the Fire Protection Program are reviewed by an individual who possesses the qualifications of a fire protection engineer. [FP-1, WA-4, 6]

#### 9.5.1.9.2 Fire Brigade

##### 9.5.1.9.2.1 General

Plant AP1000-1 is designed and the Fire Brigade organized to be self sufficient with respect to fire fighting activities. The Fire Brigade is organized to deal with fires and related emergencies that could occur. It consists of a Fire Brigade Leader and a sufficient number of team members to be consistent with the equipment that must be put in service during a fire emergency.

A sufficient number of members of each shift crew receive fire brigade training and physical examinations and are therefore qualified to be fire brigade members. The assigned Fire Brigade members for any shift shall not include the Shift Supervisor and any other members of the minimum shift operating crew necessary for safe shutdown of the unit and any other personnel required for other essential functions during a fire emergency. Fire Brigade members for a shift will be designated in accordance with established procedures at the beginning of the shift. [WA-31]

The Fire Brigade Leader and at least two brigade members per shift shall have sufficient training in, or knowledge of, plant safety-related systems to understand the effect of fire and fire suppressants on safe shutdown capacity.

The minimum equipment provided for the Callaway Plant Fire Brigade consists of personal protective equipment such as turnout coats, boots, gloves, helmets, emergency communications equipment, portable lights, portable ventilation equipment and portable extinguishers. Self-contained breathing apparatus (SCBA) approved by NIOSH are provided for selected fire brigade, emergency repair and control room personnel. [WA-32, 33, 111, 180] Additional will be provided near the personnel containment entrance for the exclusive use of the Fire Brigade. [WA-174] The Fire Brigade Leader will have ready access to keys for any locked fire doors. [WA-52]

The on-duty Shift Supervisor has responsibility for taking certain actions based on an assessment of the magnitude of the fire emergency. These actions include safely shutting down the plant, making recommendations for implementing the Emergency Plan, notification of emergency personnel and requesting assistance from off-duty personnel. Emergency Plan consideration of fire emergencies will include the guidance of Regulatory Guide 1.101. [WA-30]

To qualify as a member of the Fire Brigade, an individual must meet the following criteria:

- 1) Be available to answer fire alarms,
- 2) Has attended the required training sessions for the position he occupies on the Fire Brigade,
- 3) Has passed an annual physical exam. [WA-7, 34]

#### 9.5.1.9.2.2 Fire Brigade Training

A training program will be established to assure that the capability to fight fires is developed and documented. The program will consist of classroom instruction supplemented with periodic classroom retraining, practice in fire fighting, and fire drills. Classroom instruction and training will be conducted by qualified individuals knowledgeable in fighting the types of fires that could occur within the plant and its environs and using on-site fire fighting equipment. [WA-9]

#### 9.5.1.9.2.2.1 Classroom Instruction

Fire Brigade members receive classroom instruction in fire protection and fire fighting techniques, prior to qualifying as members of the fire brigade. This instruction will include:

- 1) Identification of flammable materials and substances along with their location within the plant and its environs.

- 2) Identification of the types of fires that could occur within the plant and its environs.
- 3) Identification of the location of onsite fire fighting equipment and familiarization with the layout of the plant including ingress and egress routes to each area.
- 4) The proper use of onsite fire fighting equipment and the correct method of fighting various types of fires.
- 5) Review of each individual's responsibilities under the Fire Protection Program.
- 6) Proper use of communication, lighting, ventilation, and emergency breathing equipment.
- 7) Fire Brigade Leader direction and coordination of fire fighting activities.
- 8) Toxic and radiological characteristics of expected combustion products.
- 9) Proper methods of fighting fires inside buildings and confined spaces.
- 10) Review of fire fighting procedures and procedure changes.
- 11) Review of fire protection-related plant modifications and changes in fire fighting plans.

#### 9.5.1.9.2.2.2 Retraining

Classroom refresher training will be scheduled on an appropriate frequency to assure retention of initial training.

#### 9.5.1.9.2.2.3 Practice

Practice sessions will be held for fire brigade members on the proper method of fighting various types of fires. These sessions will be scheduled on an appropriate frequency and will provide brigade members with experience in actual fire extinguishment and the use of emergency breathing apparatus.

#### 9.5.1.9.2.2.4 Drills

Fire brigade drills will be conducted on an appropriate frequency. Drills will be either announced or unannounced. Training objectives will be established prior to each drill and reviewed by plant management. Drills will be critiqued on the following points:

- 1) Assessment of fire alarm effectiveness.
- 2) Assessment of time required to notify and assemble the fire brigade.
- 3) Assessment of the selection, placement and use of equipment.
- 4) Assessment of the Fire Brigade Leader's effectiveness in directing the fire fighting effort.
- 5) Assessment of each Fire Brigade member's knowledge of fire fighting strategy, procedures, and use of equipment.
- 6) Assessment of the Fire Brigade's performance as a team.

Performance deficiencies identified, based on these assessments, will be used as the basis for additional training and repeat drills.

#### 9.5.1.9.3 Administrative Controls

Administrative controls for the Fire Protection Program are implemented through plant administrative procedures. These procedures will be available for review and inspection prior to implementation of the program. Industry publications NFPA 4, 4A, 6, 7, 8 and 27 will be used as guidance in developing those procedures. [WA-10]

#### 9.5.1.9.4 Control of Combustible Materials, Hazardous Materials and Ignition Sources

The control of combustible materials at Plant AP1000-1 will be defined by administrative procedures. Those procedures will impose the following controls:

- 1) Prohibit the storage of combustible materials (including unused ion exchange resins) in safety-related areas or establish designated storage areas with appropriate fire protection. [WA-230]
- 2) Govern the handling of and limit transient fire loads such as flammable liquids, wood and plastic materials in buildings containing safety-related systems or equipment.
- 3) Assign responsibility to the appropriate supervisor for reviewing work activities to identify transient fire loads.
- 4) Govern the use of ignition sources by use of a flame permit system to control welding, flame cutting, brazing and soldering operations. A separate permit will be issued for each area where such work is done.
- 5) Minimize waste, debris, scrap, and oil spills resulting from a work activity in the safety-related area while work is in progress and remove the same upon completion of the activity or at the end of each work shift.
- 6) Govern periodic inspections for accumulation of combustibles and to ensure continued compliance with these administrative controls.
- 7) Govern the use and storage of acetylene-oxygen and other compressed gasses in safety-related areas. [WA-80, 228, 229]
- 8) Govern the use and storage of hazardous chemicals. [WA-231]

#### 9.5.1.9.5 Control of Radioactive Materials

As discussed in the AP1000 DCD, the plant is designed with provisions for sampling of liquids that may contain radioactivity and may be drained to the environment. Plant operating procedures will require such liquids to be collected and sampled prior to discharge. Liquid discharges will be required to be below activity limits prior to discharge. [WA-71]

#### 9.5.1.9.6 Testing and Inspection

Testing and inspection requirements will be imposed through administrative procedures. Maintenance or modifications to the Fire Protection System will be subject to inspection to assure conformation to design requirements. Installation of portions of the system where performance cannot be verified through preoperational tests, such as penetration seals, fire retardant coatings, cable routing, and fire barriers will be inspected. Inspections will be performed by individuals knowledgeable of fire protection design and installation requirements. Inspection and testing procedures will address the identification of items to be tested or inspected, responsible organizations for the activity, acceptance criteria, documentation requirements and signoff requirements.

Fire Protection materials subject to degradation (such as fire stops, seals and fire retardant coatings) will be visually inspected periodically to assure they are not degraded or damaged. Fire hoses will be hydrostatically tested in accordance with NFPA-1962. Hoses stored in outside hose stations will be tested annually and interior standpipe hoses will be tested every 3 years. [WA-157]

The Fire Protection System will be periodically tested in accordance with plant procedures. Testing will include periodic operational tests and visual verification of damper and valve positions. [WA-149] Fire doors and their closing and latching mechanisms will also be included in these procedures. [WA-50]

#### 9.5.1.9.7 Personnel Qualification and Testing

A Fire Protection Engineer will be responsible for formulation and implementation of the Fire Protection Program. This individual will have completed not less than six years of engineering experience, three of which shall have been in a responsible position in charge of fire protection engineering work. [WA-6] This individual will report to the senior manager described in Section 9.5.1.9.1.2. Qualification and training for Fire Brigade members is discussed in Section 9.5.1.9.2.

Qualification and training of other plant personnel involved in the Fire Protection program will be governed by plant qualification procedures. These classifications include Training personnel, Maintenance personnel assigned to work on the Fire Protection system, and Operations personnel assigned to operate and perform testing. [WA-8]

#### 9.5.1.9.8 Fire Doors

Fire doors separating safety-related areas will be provided with closing mechanisms and will be inspected semiannually to verify that the closing

mechanisms are operable. Watertight and missile resistant doors are not provided with closing mechanisms.

Fire doors separating safety related areas will normally be closed and latched. Fire doors that are locked closed will be inspected weekly to verify position. Fire doors that are closed and latched will be inspected daily to assure that they are in the closed position. [WA51]



**TABLE 9.5-1  
COL INFORMATION ITEMS**

AP1000 "COL Items" (Section 9.5.1.8, including "WA" Items in Table 9.5.1-1)	BTP CMEB 9.5-1 Section	Text Reference
<b>Section 9.5.1.8 Items</b> FP-1) COL applicant to address qualification requirements for individuals responsible for development of FP Program, training, admin procedures, etc.	NA	9.5.1.9.1 (12)
FP-2) COL applicant to provide site-specific fire protection analysis information for the yard area, admin. Building, etc.	NA	FSAR Appendix 9A (later)
FP-3) COL Applicant to address BTP CMEB 9.5-1 issues from Table 9.5.1-1	See Table 9.5-1 ("WA") items below	
FP-4) COL applicant to address update of list of NFPA exceptions after DC	NA	9.5.1.9.1.1
FP-5) COL Applicant to provide analysis to demonstrate that operator actions for minimizing probability of spurious ADS actuation can be accomplished within 30 minutes of fire detection	NA	FSAR Appendix 9A (later)
<b>Table 9.5.1-1 Items (WA)</b> 1) Direction of FP Program; availability of personnel.	C.1.a(1)	9.5.1.9.1.2
2) Defense-in-depth concept; objective of fire protection program.	C.1.a(2)	9.5.1.9.1
3) Management responsibility for overall fire protection program; delegation of responsibility to staff.	C.1.a(3)	9.5.1.9.1.2
4) The Staff should be responsible for: a) Fire protection program requirements. b) Post-fire shutdown capability. c) Design, maintenance, surveillance, and quality assurance of fire protection features. d) Fire prevention activities. e) Fire brigade organization and training f) Prefire planning	C.1.a(3)	9.5.1.9.1.2(12)

AP1000 "COL Items" (Section 9.5.1.8, including "WA" Items in Table 9.5.1-1)	BTP CMEB 9.5-1 Section	Text Reference
5) The organizational responsibilities and lines of communication pertaining to fire protection should be defined through the use of organizational charts and functional descriptions.	C.1.a(4)	9.5.1.9.1.2
6) Personnel qualification requirements for fire protection engineer, reporting to the position responsible for formulation and implementation of the fire protection program.	C.1.a(5)(a)	9.5.1.9.7
7) The fire brigade members' qualifications should include a physical examination for performing strenuous activity, and the training described in position C.3.d. (WA 34)	C.1.a(5)(b)	9.5.1.9.2.1
8) The personnel responsible for the maintenance and testing of fire protection systems should be qualified by training and experience for such work.	C.1.a(5)(c)	9.5.1.9.7
9) The personnel responsible for the training of the Fire Brigade should be qualified by training and experience for such work.	C.1.a(5)(d)	9.5.1.9.2.2
10) The following NFPA publications should be used for guidance to develop the FP program: No. 4, No. 4A, No. 6, No. 7, No. 8 and No. 27.	C.1.a(6)	9.5.1.9.1.1 9.5.1.9.3
11) On sites where there is an operating reactor and construction or modification of other units is underway, the superintendent of the operating plant should have the lead responsibility for sit fire protection.	C.1.a(7)	N/A
14) Fires involving facilities shared between units should be considered.	C.1.b	N/A
15) Fires due to man-made, site-related events that have a reasonable probability of occurring and affecting more than one reactor unit should be considered.	C.1.b	N/A

AP1000 "COL Items" (Section 9.5.1.8, including "WA" Items in Table 9.5.1-1)	BTP CMEB 9.5-1 Section	Text Reference
22) Fire protection systems should retain their original design for potential man-made, site-related events that have a reasonable probability of occurring at a specific plant site.	C.1.c(4)	To be determined
26) The fire protection program for buildings storing new reactor fuel and for adjacent fire areas that could affect the fuel storage area should be fully operational before fuel is received at the site.	C.1.e(1)	9.5.1.9
27) The fire protection program for an entire reactor unit should be fully operational prior to initial fuel loading in that unit.	C.1.e(2)	9.5.1.9
28) Special considerations for the fire protection program on reactor sites where there is an operating reactor and construction or modification of other units is underway.	C.1.e(3)	N/A
29) Establishing administrative controls to maintain the performance of the fire protection system and personnel.	C.2	9.5.1.9.3 9.5.1.9.2(2)
30) The guidance of RG 1.101 should be followed as applicable.	C.3.a	9.5.1.9.2.1
31) Establishing site brigade: minimum number of Fire Brigade member on each shift, qualifications of fire brigade members, competence of brigade leader.	C.3.b	9.5.1.9.2.1
32) The minimum equipment provided for the brigade should consist of turnout coats, boots, gloves, hard hats, emergency communications equipment, portable ventilation equipment, and portable extinguishers.	C.3.c	9.5.1.9.2.1
33) Recommendations for breathing apparatus for Fire Brigade, damage control, and Control Room personnel.	C.3.c	9.5.1.9.2.1
34) Recommendations for Fire Brigade training program.	C.3.d	9.5.1.9.2.1

AP1000 "COL Items" (Section 9.5.1.8, including "WA" Items in Table 9.5.1-1)	BTP CMEB 9.5-1 Section	Text Reference
35) Establishing quality assurance (QA) programs by applicants and contractors for the fire protection systems for safety-related areas; identification of specific criteria for quality assurance programs.	C.4	9.5.1.7 and FSAR Chapter 17
50) Fire doors should be inspected semi-annually to verify that automatic hold-open, release, and closing mechanisms and latches are operable.	C.5.a(5)	9.5.1.9.6
51) Alternative means for verifying that fire doors protect the door opening as required in case of fire.	C.5.a(5)	9.5.1.9.8
52) The fire brigade leader should have ready access to keys for any locked fire doors	C.5.a(5)	9.5.1.9.2.1
56) Fire exit routes should be clearly marked.	C.5.a(7)	9.5.1.2.1.1
71) Water drainage from areas that may contain radioactivity should be collected, sampled and analyzed before discharge to the environment.	C.5.a(14)	9.5.1.9.5
80) Use of compressed gases in buildings should be controlled.	C.5.d(2)	9.5.1.9.4(7)
111) A portable radio communications system should be provided for use by the fire brigade and other operations personnel required to achieve safe plant shutdown.	C.5.g(4)	9.5.1.9.2
149) All valves in the fire protection system should be periodically checked to verify position	C.6.c(2)	9.5.1.9.6
157) Fire hoses should be hydrostatically tested in accordance with NFPA 1962. Hoses stored in outside hose houses should be tested annually. The interior standpipe hose should be tested every 3 years.	C.6.c(6)	9.5.1.9.6

AP1000 "COL Items" (Section 9.5.1.8, including "WA" Items in Table 9.5.1-1)	BTP CMEB 9.5-1 Section	Text Reference
174) Self contained breathing apparatus should be provided near the containment entrances for firefighting and damage control personnel. These units should be independent of any breathing apparatus provided for general plant activities.	C.7.a(2)	9.5.1.9.2.1
180) Breathing apparatus for main control room operators should be readily available	C.7.b	9.5.1.9.2.1
225) Cooling towers should be of non-combustible construction or so located and protected that a fire will not affect any safety related systems or equipment.	C.7.q	FSAR Appendix 9A (later)
228) Gas (acetylene-oxygen) cylinder storage locations should not be in areas that contain or expose safety-related systems or the fire protection systems that protect those systems.	C.8.a	9.5.1.9.4(7)
229) A permit system for use of acetylene-oxygen gases in safety related areas should be required.	C.8.a	9.5.1.9.4(7)
230) Unused ion exchange resins should not be stored in areas that contain or expose safety-related equipment.	C.8.b	9.5.1.9.4(1)
231) Hazardous chemicals should not be stored in areas that contain or expose safety-related equipment.	C.8.c	9.5.1.9.4(8)

# **NRC Workshop on Program Information to be Provided in COL Applications**

## **Industry Perspective**

August 25, 2003



1

## **Discussion Topics**

- Background
- Key Issues
- NRC Proposal
- Conclusions



2

## Scope of COL ITAAC

- The following types of ITAAC are required by Part 52:
  - Standard design
  - Plant-specific design
  - Emergency planning
- SRM/SECY-02-0067 provides the framework for determining the extent to which ITAAC may also be necessary on operational programs



3

## Commission Framework

- ITAAC should not be necessary for “most, if not all,” of the 14 representative operational programs identified in SECY-02-0067
- The “maximum number of programmatic issues” should be resolved at time of COL issuance
- “...ITAAC for a program should not be necessary if the program and its implementation [*i.e.*, how it is to be implemented] are fully described in the COL application and found acceptable”



4

## **Commission Framework (cont.)**

- The Commission's 9/11/02 SRM also provided for separation of:
  - Reasonable assurance findings (RAF) based on description of operational programs
  - Later verification of program implementation as part of inspections prior to operation



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## **Key Issues**

1. What provides reasonable assurance that operational programs, such as Fire Protection, will meet NRC requirements and provide adequate protection of the public health and safety?
2. What type and level of information on program implementation is needed to support NRC reasonable assurance finding(s) at COL?



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## Reasonable assurance findings on programs at COL

- Reasonable assurance findings at COL should be based on whether the licensing process *as a whole* provides the necessary assurance of conformity with NRC requirements, including:
  - NRC regulations, including 10 CFR 50.48 & GDC 3
  - COL, including tech specs & standard FP license condition
  - Enforcement authority
- Program implementation, and NRC inspection thereof, is not necessary to support reasonable assurance findings at COL

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## Reasonable assurance findings at COL (cont.)

- Reasonable assurance that operational programs, such as Fire Protection, will meet NRC requirements and provide adequate protection of the public health and safety:
  - Based on program information provided at COL and required compliance with the license and NRC requirements
  - Assured by NRC oversight and enforcement authority
  - Demonstrated by experience under Part 50
- Programmatic ITAAC would provide no additional assurance

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## Key Issues

1. What provides reasonable assurance that operational programs, such as Fire Protection, will meet NRC requirements and provide adequate protection of the public health and safety?
2. What type and level of information on program implementation is needed to support NRC reasonable assurance finding(s) at COL?

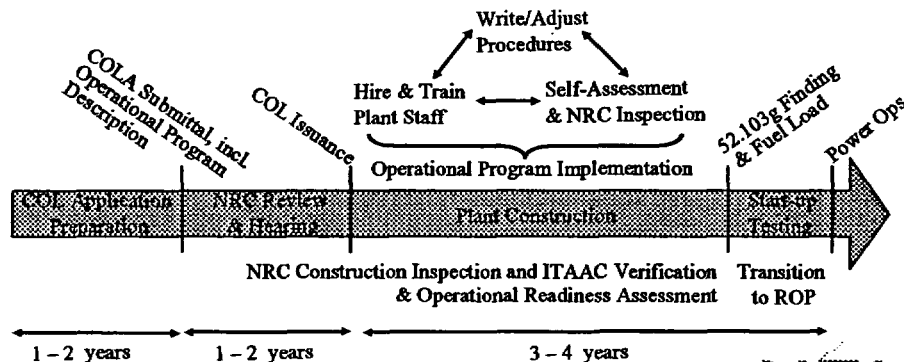


## Timing of Operational Program Implementation

- |   |   |   |
|---|---|---|
| ■ Programs required at COL incl.: <ul style="list-style-type: none"><li>• Construction QA</li><li>• Construction FFD [10 CFR 26.2(c)]</li><li>• Part 21</li></ul> | } | ■ Programs described in COL application                               |
|   |   | ■ Program implemented   |
|   |   | ■ Procedures available  |
| ■ Programs required prior to fuel load/operation: <ul style="list-style-type: none"><li>• FP, RP, Security, Training, etc.</li></ul>                              | } | Programs and schedule for implementation described in COL application |
| ■ Programs not required until after fuel load incl.: <ul style="list-style-type: none"><li>• Maintenance Rule</li><li>• ISI/IST</li></ul>                         |   | Programs and schedule for implementation described in COL application |



## Nominal Project Progression



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## Type and Level of Program Info for COL Applications – FP Example

- A plant-specific DCD referencing the AP1000/600 would include:
  - Sections 9.5.1.1 through 9.5.1.8, per the generic DCD
  - Plant-specific fire protection analyses
  - Updated table of SRP conformance, including COL applicant items
  - New section 9.5.1.9 on FP Program Implementation
    - ◆ FP Program description
    - ◆ Implementation timing
- All standard design and COL applicant SRP review areas to be addressed by the FSAR

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COL applications will provide a level of detail on the fire protection program and how it will be implemented that is equivalent in substance to OL applications



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## **New section 9.5.1.9 on FP Program Implementation**

- Identifies that the FP Program will be implemented by procedures to be developed later (after COL issuance)
- Provides FP Program description on which to base a RAF
  - Consistent with generic DCD and SRP; exceptions noted
  - Similar to information provided in Callaway site-specific FSAR addendum
  - New requirements and regulatory guidance, e.g., RG 1.189, to be addressed, as appropriate
- FP procedures to be developed and available to support NRC inspection of program implementation prior to receipt of first fuel on site, or fuel load, as appropriate



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## Program Description vs. Procedures

- FP Program description to be provided in FSAR:
  - Program objectives & defense in depth philosophy
  - Program attributes and required functions
  - Qualifications and training requirements
  - QA and administrative controls
- Procedure-type information to be developed post-COL
  - Titles and numbers of FP personnel
  - Organizational relationships
  - Firefighting procedures
  - etc.



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## FSAR Program Description vs. Procedures

COL FSAR Description	Callaway Procedures
<ul style="list-style-type: none"> <li>■ Key positions described</li> <li>■ Overall duties and delegation authority identified</li> </ul>	Duties specified for nine different FP positions
<ul style="list-style-type: none"> <li>■ FP Program Manager is a senior manager reporting to an appropriate nuclear officer</li> </ul>	Top FP manager is Manager, Nuclear Engineering



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## COL Review of Operational Programs

- NRC expected to review FSAR program descriptions at COL based on:
  - Standard Review Plan
  - COL Review Standard (if any)
  - Recent regulatory guidance, e.g., RG 1.189
- NRC reasonable assurance finding(s) on program acceptability expected to be based on:
  - Adequacy of information provided by the COL applicant
  - Licensing process as a whole



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## NRC July 1 Proposal

- Generally agree with items 1, 2, 3, and 6 of the staff's July 1 proposal
- Concerns with expectation of procedure-level information at COL (Items 4 & 5 of proposal)
  - Not necessary or practical to develop procedures prior to COL issuance
    - ◆ Exceptions include Construction QA & FFD
    - ◆ Procedure development is an iterative process that requires operations, engineering, training and tech support staff that will not be available until later



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## **Concerns with NRC proposal (cont.)**

- Procedure review at COL would not be meaningful; NRC post-implementation re-inspection of procedures would be expected (eg, see IP64704 on FP)
- NRC proposal is not consistent with existing requirements and guidance
  - 10 CFR 50.120 and proposed 52.209 (on training)
  - SRP (e.g., Section 13.5.2.1 on EOPs)



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## **Summary of Industry Perspective**

- Lack of procedures at COL is not a problem, and requiring ITAAC on programs is not a solution
  - NRC can and must make RAFs at COL on the acceptability of operational programs
  - The staff proposal already acknowledges that ITAAC are not required for Maintenance Rule and ISI/IST programs
  - ITAAC are not necessary on programs because other mechanisms assure conformity with NRC requirements



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## **Summary of Industry Perspective (cont.)**

- Programs are "fully described" for purposes of a COL application if the information provided is necessary and sufficient to support NRC reasonable assurance findings (RAF) on program acceptability, i.e., that programs meet NRC requirements (or will meet NRC requirements when fully implemented)
- Most operational programs will not be implemented at time of COL; COL applications will describe the procedures that will be developed to govern how operational programs are implemented
- Operational program implementation is assured by required compliance with the license and NRC regulations and associated NRC oversight/enforcement

